

MIL-T-27/194A  
15 May 1978  
SUPERSEDING  
MIL-T-27/194  
18 October 1977

MILITARY SPECIFICATION SHEET  
TRANSFORMERS, POWER, STEPDOWN AND STEP-UP,  
TF5S03ZZ AND TF5T03ZZ

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for procuring the transformers described herein shall consist of this document and the latest issue of Specification MIL-T-27.

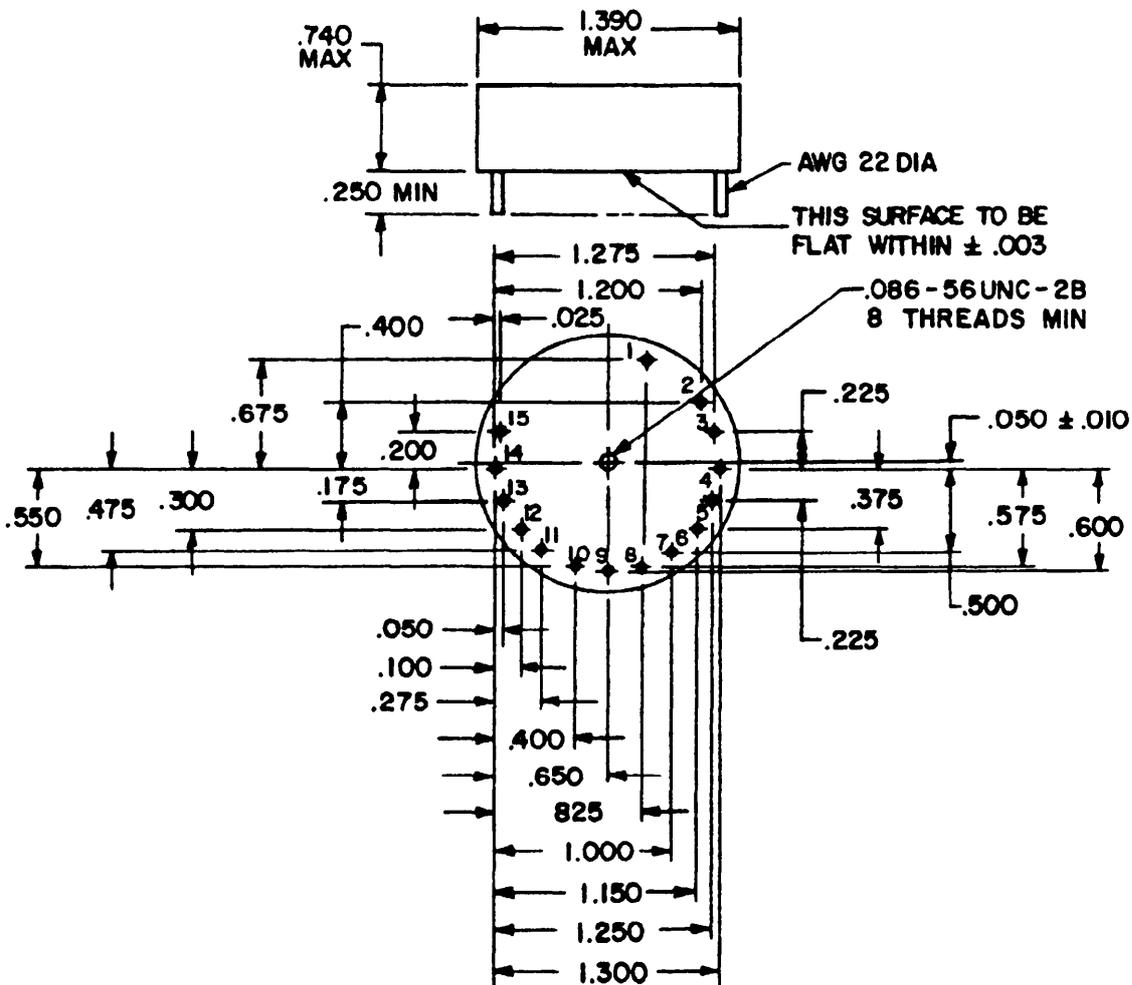
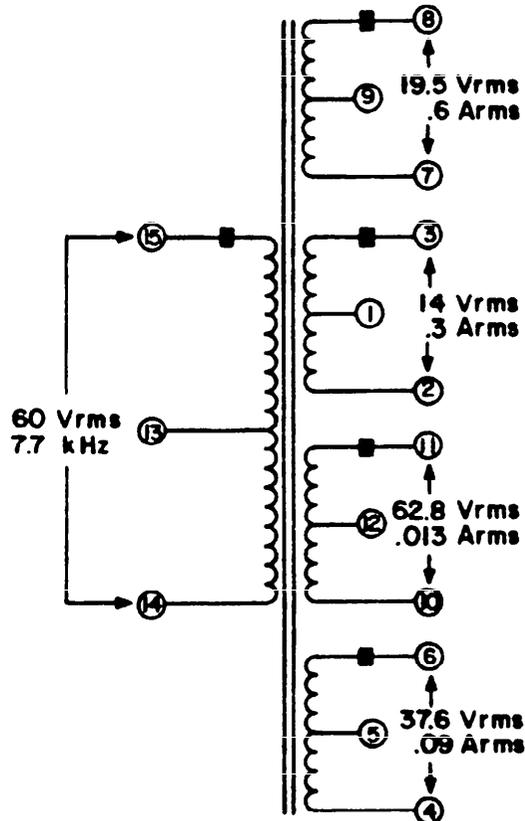


FIGURE 1. Dimensions and configuration.

(A) denotes change



**WORKING VOLTAGE: 175 V MAX**  
**CIRCUIT DIAGRAM AND MARKING**

INCHES	MM	INCHES	MM	INCHES	MM
.003	.08	.275	6.98	.675	17.14
.010	.25	.300	7.62	.740	18.80
.025	.64	.375	9.52	.825	20.96
.050	1.27	.400	10.16	1.000	25.40
.086	2.18	.475	12.06	1.150	29.21
.100	2.54	.500	12.70	1.200	30.48
.175	4.44	.550	13.97	1.250	31.75
.200	5.08	.575	14.60	1.275	32.38
.225	5.72	.600	15.24	1.300	33.02
.250	6.35	.650	16.51	1.390	35.31

**NOTES:**

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4 mm.
3. Unless otherwise specified, tolerance is  $\pm .005$  (.13 mm).
4. Marking shall be on the top of the case.

FIGURE 1. Dimensions and configuration - Continued.

REQUIREMENTS: (When numbers in parentheses, i.e. (1-2) are used, they indicate the windings and the extreme terminals of the windings.)

Electrical ratings:

Primary voltage (14-15): 60 volts rms, 7.7 kilohertz.

Primary current: .34 ampere rms.

Primary power: 20.4 volts, ampere.

Secondary voltage:

(7-8): 19.5 volts rms, .6 ampere rms.

(2-3): 14 volts rms, .3 ampere rms.

(10-11): 62.8 volts rms, .013 ampere rms.

(4-6): 37.6 volts rms, .09 ampere rms.

Working voltage: 175 volts, maximum.

DC resistance:

(14-15): .4 ohm.

(7-8): .24 ohm.

(2-3): .35 ohm.

(4-6): 1.16 ohms.

(10-11): 10 ohms.

Design and construction:

Dimensions and configuration: See figure 1.

Duty cycle: Continuous.

Case: Encapsulated.

Material: Epoxy.

Terminals: Pin type.

Material: Type S, tin lead or lead-tin coating in accordance with QQ-W-343.

Height: .250 inch, minimum.

Diameter: AWC 22 (.025 inch)

Weight: 4 ounces, maximum.

(A) Operating temperature range: see table I.

Terminal strength: MIL-STD-202, method 211, test condition A, 2 pounds. (A)

Dielectric withstanding voltage (at sea level): 1,000 volts rms.

Electrical characteristics:

No load: With 60 volts rms and 7.7 kilohertz in (14-15):

Current in (14-15): 44 milliamperes, maximum.

Power in (14-15): 2.3 watts, maximum.

Voltage across (7-8): 19.5 volts rms  $\pm 1$  percent.

Voltage across (2-3): 14 volts rms  $\pm 1$  percent.

Voltage across (10-11): 62.8 volts rms  $\pm 1$  percent.

Voltage across (4-6): 37.6 volts rms  $\pm 1$  percent.

Rated load: With 60 volts rms, and 7.7 kilohertz (14-15):

Voltage across (7-8): 19.5 volts rms  $\pm 5$  percent.

Voltage across (2-3): 14 volts rms  $\pm 5$  percent.

Voltage across (10-11): 62.8 volts rms  $\pm 5$  percent.

Voltage across (4-6): 37.6 volts rms  $\pm 5$  percent.

Polarity: Additive with terminals 3 and 7, 11 and 2, and 6 and 10 connected.

(A) Temperature rise: 40°C with 60 volts rms, 7.7 kilohertz across (14-15) at specified ambient temperature (see table I).

Vibration (high frequency): MIL-STD-202, method 204.

Shock (specified pulse): MIL-STD-202, method 213, test condition A.

Marking location: See figure 1.

Part number: M27/194-(dash number from table I).

(A) TABLE I. Temperature characteristics.

Dash no.	Type designation	Ambient temperature	Temperature rise	Operating temperature range
01	TF5S03ZZ	90°C	40°C	-55° to +130°C
02	TF5T03ZZ	130°C	40°C	-55° to +170°C

Custodians:

Army - EL  
 Navy - EC  
 Air Force - 85

Review activities:

Army - MI  
 Navy - SH, OS  
 Air Force - 11, 17, 99  
 DLA - ES

User activities:

Army - ME, AR,  
 Navy - AS, MC  
 Air Force - 19

Preparing activity:

Army - EL

Agent:

DLA - ES

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